



**UNIVERSITI PUTRA MALAYSIA**

**AN ANALYSIS OF MARKET CONCENTRATION ON SELECTED  
FOOD MANUFACTURING INDUSTRY IN MALAYSIA**

**KONG CHEE SING.**

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**AN ANALYSIS OF MARKET CONCENTRATION ON SELECTED FOOD  
MANUFACTURING INDUSTRY IN MALAYSIA**

By

**KONG CHEE SING**

**Thesis Submitted to the School of Graduate Studies,  
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of the requirement for the degree of Master of Science

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**Chairperson : Professor Mohd. Ghazali Mohayidin, Ph.D.**

**Faculty : Agriculture**

The Malaysian food manufacturing industry is an important industry in terms of its contribution to manufacturing output, growth and profitability in the food sector. One of the most influential approaches among various theories of industrial organisation is the Structure-Conduct-Performance (S-C-P) model, which highlights the competitive conditions in an industry by examining the structure of the industry related to the behaviour and performance of firms. The elements that constitute market structure and the manner in which it affects firms' performance and conduct are important aspects to consider in understanding the S-C-P relationships.

This study analyses the determinants of changes in S-C-P over time for the food manufacturing industry in Malaysia, which is divided into five selected sub-industries. The data used in this study are based on secondary data collected from various firms registered under the Company Commission of Malaysia. This study

covers a period of 10 years, i.e. from 1992 to 2002. Concentration Ratio and Herfindahl-Hirschman Index and Gini Coefficient are used to measure the market structure. Meanwhile, the market conduct is measured by Advertising-Sales Ratio, whilst, the Profitability Ratio Analysis and Sales Ratio are used to measure market performance. Regression analysis using Two-Stage Least-Square is carried out to study the S-C-P model.

The results indicate that the Malaysian food manufacturing industry tended to have low concentrated market throughout the study period. Nevertheless, the findings also show the industry was still characterised with oligopolistic practices which was evident by the existence of a few large firms. The advertising and rate of return also fluctuated slightly due to the influence of market elements.

The results of regression analysis prove the existence of primary and feedback effects between market structure, conduct and performance based on industrial organisation approach in Malaysian food manufacturing industry. The main findings of this study are concentration do depend on firm profitability as well as advertising intensity; concentration do determine advertising; however, advertising seems to have no effect on profitability. In addition, advertisement intensity and profitability demonstrate the feedback effect; effect of conduct on structure; and performance on conduct and market structure. The relationship between concentration and advertising shows that concentrated industry spends more on advertising. Thus, higher profits also lead to higher advertising.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**ANALISIS KONSENTRASI PASARAN TERHADAP INDUSTRI  
PERKILANGAN MAKANAN TERPILIH DI MALAYSIA**

Oleh

**KONG CHEE SING**

**April 2004**

**Pengerusi : Profesor Mohd. Ghazali Mohayidin, Ph.D.**

**Fakulti : Pertanian**

Industri perkilangan makanan merupakan sebuah industri yang penting dari segi sumbangannya dalam pengeluaran perkilangan, pertumbuhan dan keuntungan dalam sektor makanan. Antara pendekatan yang paling berpengaruh dalam teori organisasi perindustrian adalah model struktur-kelakuan-prestasi (S-K-P), yang menekankan keadaan persaingan kompetitif dalam suatu industri menerusi kajian stuktur industri berkaitan dengan pelakuan dan prestasi sesebuah syarikat. Elemen-elemen yang mewakili struktur pasaran and tatacara bagaimana ia mempengaruhi prestasi dan kelakuan syarikat adalah aspek penting dalam memahami hubungan antara S-K-P.

Kajian ini menganalisis faktor-faktor perubahan di dalam S-K-P bagi industri perkilangan di Malaysia yang dibahagikan kepada lima sub-industri terpilih. Kajian ini menggunakan data sekunder yang dikumpul dari pelbagai firma berdaftar di bawah Suruhanjaya Syarikat Malaysia. Tempoh kajian merangkumi 10 tahun iaitu 1992 hingga 2002. Kaedah nisbah konsentrasi, indeks Herfindahl-Hirschman dan

nisbah Gini digunakan sebagai pengukur struktur pasaran. Sementara itu, pelakuan pasaran dikaji melalui nisbah pengiklanan-jumlah jualan, manakala nisbah kewangan dan nisbah jualan dijadikan sebagai penunjuk prestasi pasaran. Analisis regresi juga dijalankan dalam mengkaji model struktur-kelakuan-prestasi.

Keputusan kajian menunjukkan bahawa industri perkilangan makanan di Malaysia mempunyai tahap konsentrasi yang rendah. Walau bagaimanapun, keputusan juga menunjukkan industri tersebut masih mempunyai ciri-ciri oligopolistik dengan wujudnya kehadiran beberapa buah firma besar. Pengiklanan dan tahap perolehan juga berubah disebabkan adanya pengaruh dari elemen-elemen pasaran.

Keputusan analisis regresi membuktikan adanya pengaruh utama dan kesan maklum balas antara struktur pasaran, kelakuan dan prestasi adalah berdasarkan pendekatan organisasi perindustrian dalam industri perkilangan makanan. Penemuan utama menunjukkan konsentrasi dipengaruhi oleh keuntungan syarikat dan intensiti pengiklanan; dan ia sendiri mempengaruhi pengiklanan; namun pengiklanan tidak mempunyai pengaruh terhadap keuntungan. Tambahan pula, intensiti pengiklanan dan keuntungan menunjukkan berlakunya kesan maklum balas; kesan kelakuan terhadap struktur; dan, prestasi terhadap kelakuan dan struktur pasaran. Hubungan antara konsentrasi dan pengiklanan menunjukkan industri yang mempunyai nisbah konsentrasi yang tinggi, menggunakan lebih banyak pengiklanan. Oleh itu, keuntungan yang tinggi juga meningkatkan intensiti pengiklanan.

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I certify that an Examination Committee met on 1<sup>st</sup> April 2004 to conduct the final examination of Kong Chee Sing on his Master of Science thesis entitled “An Analysis of Market Concentration on Selected Food Manufacturing Industry in Malaysia” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

**MOHD. MANSOR ISMAIL, Ph.D.**

Associate Professor  
Faculty of Agriculture  
Universiti Putra Malaysia  
(Chairman)

**MOHD. GHAZALI MOHAYIDIN, Ph.D.**

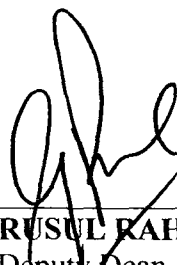
Professor  
Director of Academic Development Center  
Universiti Putra Malaysia  
(Member)

**ZAINAL ABIDIN MOHAMED, Ph.D.**

Associate Professor  
Faculty of Agriculture  
Universiti Putra Malaysia  
(Member)

**ISMAIL ABDUL LATIF**

Faculty of Agriculture  
Universiti Putra Malaysia  
(Member)



**GULAM RUSUL RAHMAT ALI, Ph.D.**

Professor/Deputy Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 17 JUN 2004

This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee are as follows:

**MOHD. GHAZALI MOHAYIDIN, Ph.D.**


Professor  
Director of Academic Development Center  
Universiti Putra Malaysia  
(Member)

**ZAINAL ABIDIN MOHAMED, Ph.D.**

Associate Professor and Head  
Faculty of Agriculture  
Universiti Putra Malaysia  
(Member)

**ISMAIL ABDUL LATIF, M. Econs**

Faculty of Agriculture  
Universiti Putra Malaysia  
(Member)



---

**AINI IDERIS, Ph.D.**

Professor/Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 09 JUL 2004

## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been acknowledged. I also declare that this thesis has not been previously or concurrently submitted for any other degree at UPM or any other institutions.

  
**KONG CHEE SING**

Date: 30 JUN 2004

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## LIST OF ABBREVIATIONS

<b>ADV</b>	Advertising Intensity
<b>AFTA</b>	ASEAN Free Trade Area
<b>ASEAN</b>	Association of South-East Asian Nation
<b>CAP</b>	Capital Intensity
<b>CCM</b>	Companies Commission of Malaysia
<b>CR</b>	Concentration Ratio
<b>DOS</b>	Department of Statistic Malaysia
<b>EU</b>	European Union
<b>FDI</b>	Foreign Direct Investment
<b>FMM</b>	Federation of Malaysian Manufacturers
<b>GC</b>	Gini Coefficient
<b>GDP</b>	Gross Domestic Product
<b>GRO</b>	Growth of Sales
<b>H</b>	Entropy
<b>HHI</b>	Herfindahl-Hirschman Index
<b>ICT</b>	Information and Communication Technology
<b>IMP</b>	Industrial Master Plan
<b>IT</b>	Information Technology
<b>MCR</b>	Marginal Seller Concentration
<b>MES</b>	Minimum Efficient Scale

<b>MIDA</b>	Malaysian Industrial Development Authority
<b>MITI</b>	Ministry of International Trade and Industry
<b>MNC</b>	Multinational Corporations
<b>MOF</b>	Ministry of Finance Malaysia
<b>MP</b>	Malaysian Plan
<b>MSC</b>	Multimedia Super Corridor
<b>MSIC</b>	Malaysian Standard Industrial Classification
<b>NAP</b>	National Agricultural Policy
<b>NEP</b>	New Economy Policy
<b>NDP</b>	National Development Policy
<b>OLS</b>	Ordinary Least-Square
<b>OPP</b>	Long-term Outline Perspective Plan
<b>PCM</b>	Price-Cost Margin
<b>RED</b>	Redundancy Measure
<b>RM</b>	Ringgit Malaysia
<b>ROA</b>	Rate of Return on assets after Tax
<b>ROE</b>	Rate of Return on Shareholders' Equity after Tax
<b>ROS</b>	Rate of Return on Sales after Tax
<b>R&amp;D</b>	Research and Development
<b>S-C-P</b>	Structure-Conduct-Performance
<b>SITC</b>	Standard International Trade Classification
<b>SMEs</b>	Small and Medium Enterprises

<b>SPSS</b>	Statistical Package for Social Science
<b>TSLS</b>	Two-Stage Least-Square
<b>UK</b>	United Kingdom
<b>US</b>	United States of America
<b>3SLS</b>	Three-Stage Least-Square



## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background of Malaysian Manufacturing Industry**

The Malaysian economy has gone through rapid structural changes since the country's independence in 1957. It has now become one of the most advanced countries in the Third World. The economy of Malaysia was a balanced mix of traditional primary commodity productions. The fast-expanding manufacturing sector has shown a promise of strong continuous growth in the future.

Malaysia's industrialisation process has undergone five distinctive phases (Jomo, 1993). The first phase of industrialisation during British colonial rule was largely limited to export and import, processing and packaging of food and simple consumer items, especially when encouraged by transport cost consideration. The second phase that took place after independence (1957-1968) saw the growth of import substituting manufacturing on industrial estates which is protected by high tariffs.

Subsequently, the third phase of export-oriented industrialisation (1968-1980) began as the limits of import substitution became apparent and a new international division of labour emerged, particularly involving manufacturing. The new labour intensive

industries generated much new and necessary employment. Next came the fourth phase (1983-1986) which was less distinct because it did not involve explicit abandonment of export-oriented industrialisation, but only the promotion of selected heavy industries. The fifth and also the current phase of industrialisation (since 1986), has seen a dramatic recovery of the Malaysian manufacturing sector. Lower cost production, deregulation and new investment incentives have contributed to the increases in manufacturing investment, growth, export and employment.

The Second Malaysian Plan introduced by the government, which encouraged foreign investment, was one of the factors that contributed to the growth of manufacturing sector in the earlier years. Since 1970, the manufacturing sector has been the fastest growing sector in Malaysia's economy. Manufactured exports gradually became an important direct source of growth by 1975. By 1974 to 1976, manufactured exports had maintained their contribution to growth at about 20 percent and additional import substitution appeared to have contributed 12 to 13 percent to growth in those years. Significantly, for the first time in 1983, Malaysian manufactured exports overtook petroleum to become the country's top foreign exchange earner (Economic Report, 1984).

### **1.1.1 Sectoral Performance in Malaysian Economy**

Following a period of expansion in the previous eight years, Malaysian economy expanded at a more sustainable pace in 2000 (Economic Report 1999/2000). Malaysia's real average gross domestic product (GDP) growth increased from 9.7 percent in 1990 to 10.0 percent in 1996. However, due to the world financial crisis which happened at the end of 1997, the country's GDP dropped to negative 7.4 percent in 1998. Nevertheless, Malaysian GDP growth rebounded to 8.3 percent in 2000.

The performance of the Malaysian economy in 2001 was adversely affected by the greater-than-expected slowdown in the world economy particularly in the United States (US) as well as the continuing weak performance of the Japanese economy. The terrorist attack on the US led to greater uncertainties with respect to the severity and duration of the recovery in the US (Economic Report 2001/2002). In the light of the more difficult environment, real GDP growth of Malaysian economy was only 0.5 percent in 2001. Malaysian economy was expected to recover from a slower growth in 2001 to register a higher real GDP growth of 4 to 5 percent in 2002.

The Malaysian economic activities are divided into ten major groups which are; agriculture, livestock, forestry and fishing; mining and quarrying; manufacturing; electricity, gas and water; construction; wholesale and retail trade, hotel and



restaurant; transport, storage and communication; finance, insurance, real estate and business services; government services; and other services. As shown in Table 1.1, manufacturing sector was the largest contributor to the national GDP starting from with 30.2 percent from the total national GDP which carried about RM 63.5 billion in 2001. This was followed by ‘wholesale and retail trade, hotel and restaurant’ sector, and the finally, ‘finance, insurance, real estate and business services’ sector with GDP of 15.2 and 14.2 percent respectively from the total GDP.

Table 1.1: Gross Domestic Product (GDP) by Kind of Economic Activity at Constant Prices 1987 (RM Million)

Economic Activity	1987		1991		1995		1998		2001	
	GDP	% share	GDP	% share	GDP	% share	GDP	% share	GDP	% share
ALF	16,185	19.96	17,292	14.90	17,115	10.27	17,512	9.61	17,897	8.50
MNQ	10,235	12.62	10,432	8.99	13,863	8.32	14,357	7.88	15,258	7.25
MFG	16,058	19.80	29,708	25.59	45,174	27.11	50,899	27.93	63,536	30.19
EGW	2,129	2.63	2,838	2.44	5,876	3.53	6,745	3.70	8,427	4.00
CON	2,818	3.48	4,333	3.73	7,411	4.45	7,241	3.97	7,108	3.38
WTR	8,720	10.75	16,277	14.02	25,304	15.19	28,489	15.63	31,904	15.16
TSC	5,267	6.50	7,777	6.70	12,298	7.38	14,720	8.08	18,079	8.59
FIR	6,239	7.69	10,033	8.64	17,287	10.37	23,583	12.94	29,819	14.17
OSS	5,527	6.82	8,595	7.40	12,780	7.67	15,036	8.25	16,388	7.79
GSS	8,853	10.92	9,738	8.39	11,803	7.08	13,180	7.23	14,895	7.08
Total GDP	81,086	100.00	116,092	100.00	166,625	100.00	182,236	100.00	210,640	100.00

MFG = Manufacturing  
MNQ = Mining and Quarrying  
EGW = Electricity, Gas and Water  
CON = Construction  
OSS = Other services

ALF = Agriculture, Livestock, Forestry and Fishing  
WTR = Wholesale and Retail Trade, Hotel and Restaurant  
TSC = Transport, Storage and Communication  
FIR = Finance, Insurance, Real Estate and Business Services  
GSS = Government Services

Source: Department of Statistic Malaysia, 2002

